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## PATENT COOPERATION TREATY

PCT/DE2003/004146



## PCT

## INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference 2002.0077PWO	<b>FOR FURTHER ACTION</b> See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/DE2003/004146	International filing date ( <i>day/month/year</i> ) 16 December 2003 (16.12.2003)	Priority date ( <i>day/month/year</i> ) 16 December 2002 (16.12.2002)
International Patent Classification (IPC) or national classification and IPC A61C 1/18		
Applicant SIRONA DENTAL SYSTEMS GMBH		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of 6 sheets, including this cover sheet.

☐ This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of \_\_\_\_\_ sheets.

3. This report contains indications relating to the following items:

- I ☒ Basis of the report
- II ☐ Priority
- III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV ☐ Lack of unity of invention
- V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☐ Certain defects in the international application
- VIII ☐ Certain observations on the international application

Date of submission of the demand 15 June 2004 (15.06.2004)	Date of completion of this report 14 March 2005 (14.03.2005)
Name and mailing address of the IPEA/EP	Authorized officer
Facsimile No.	Telephone No.

# INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/DE2003/004146

## I. Basis of the report

### 1. With regard to the elements of the international application:\*

- ☐ the international application as originally filed
- ☒ the description:  
 pages \_\_\_\_\_ 1-19 \_\_\_\_\_, as originally filed  
 pages \_\_\_\_\_, filed with the demand  
 pages \_\_\_\_\_, filed with the letter of \_\_\_\_\_
- ☒ the claims:  
 pages \_\_\_\_\_, as originally filed  
 pages \_\_\_\_\_, as amended (together with any statement under Article 19  
 pages \_\_\_\_\_, filed with the demand  
 pages \_\_\_\_\_ 1-27 \_\_\_\_\_, filed with the letter of \_\_\_\_\_ 13 October 2004 (13.10.2004)
- ☒ the drawings:  
 pages \_\_\_\_\_ 1/4-4/4 \_\_\_\_\_, as originally filed  
 pages \_\_\_\_\_, filed with the demand  
 pages \_\_\_\_\_, filed with the letter of \_\_\_\_\_
- ☐ the sequence listing part of the description:  
 pages \_\_\_\_\_, as originally filed  
 pages \_\_\_\_\_, filed with the demand  
 pages \_\_\_\_\_, filed with the letter of \_\_\_\_\_

### 2. With regard to the language, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

- These elements were available or furnished to this Authority in the following language \_\_\_\_\_ which is:
- ☐ the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of the translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

### 3. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

### 4. ☐ The amendments have resulted in the cancellation of:

- ☐ the description, pages \_\_\_\_\_
- ☐ the claims, Nos. \_\_\_\_\_
- ☐ the drawings, sheets/fig \_\_\_\_\_

### 5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).\*\*

\* Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rule 70.16 and 70.17).

\*\* Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.

# INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/DE 03/04146

## V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

### 1. Statement

Novelty (N)	Claims	2-5, 9, 10, 19, 20, 22, 23, 27	YES
	Claims	1, 6, 8, 11-18, 21, 24-26	NO
Inventive step (IS)	Claims	4, 7, 10, 22, 23	YES
	Claims	2, 3, 5, 9, 19, 20, 27	NO
Industrial applicability (IA)	Claims	1-27	YES
	Claims		NO

### 2. Citations and explanations

Reference is made to the following documents:

D1: US 2002/142264

D4: US-A-6 158 893.

1. The present application fails to meet the requirements of PCT Article 33(1) since the subject matter of claim 1 lacks novelty (PCT Article 33(2)).

- 1.1 With regard to claim 1, document D1 discloses (paragraphs [9] and [16]) a dental handpiece with parts that can be moved relative to each other:
- the parts being in mutual surface-contact, and further comprising a lubricant for the lubrication of said parts,
  - at least one of the parts having a coating (14) of lubricant (see paragraph [16], line 7, "layer of solid lubricant") on at least part of its surface, and
  - the lubricant being constituted such that, when the parts move, it is transferred from the part with the coating to the uncoated part (layers of silver have this property), and

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- the lubricant (silver) and the opposing surface of the uncoated part being so constituted that the lubricant adheres to the opposing surface of the uncoated part (54) (the silver transferred will also adhere thereto), and
- the lubricant (silver) in the coating (14) being a solid lubricant.

Thus, the subject matter of claim 1 lacks novelty.

1.2 The applicant is advised that the subject matter of claim 1 is also disclosed in document D4 (column 4, line 63 to column 5, line 20; figure 2). D4 describes a dental handpiece (see column 2, lines 64-66: the disclosed bearing is part of a dental drill) with parts that can be moved relative to each another (14, 18):

- the parts being in mutual surface-contact, and further comprising a lubricant for the lubrication of said parts (14, 18),
- at least one of the parts having a coating (115) of lubricant (MoS<sub>2</sub> coating, see column 5, line 5) on at least part of its surface, and
- the lubricant being constituted such that, when the parts move, it is transferred from the part (18) having the coating to the uncoated part (14) (MoS<sub>2</sub> layers are known for such a property), and
- the lubricant (MoS<sub>2</sub>) and the opposing surface of the uncoated part (14) being so constituted that the lubricant adheres to the opposing

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surface of the uncoated part (14) (because of its properties, an MoS<sub>2</sub> layer will adhere to a carbide-coated shaft), and

- the lubricant (MoS<sub>2</sub>) in the coating (15) is a solid lubricant.

2. Dependent claims 2, 3, 5, 6, 8, 9, 11-21 and 24-27 contain no features which, combined with the features of any claim to which they refer, meet the PCT requirements for novelty and/or inventive step:

2.1 The features of claims 2, 19 and 20 relate merely to one of several obvious possibilities from which a person skilled in the art would choose according to the circumstances in order to devise the dental handpiece as per said claims, without thereby being inventive.

2.2 However, for a person skilled in the art, it is common knowledge that a metal coating on a synthetic material often requires a support layer. It is consequently implicit that the features of claims 3, 5 and 9 concern part of the subject matter of document D1.

2.3 Claim 6: the polymer-PTFE layer of D4 or the silver layer of D1 can become fluid during use.

2.4 Claims 8, 11, 13 and 16: the soft layers disclosed in D4 ("soft coating": PAI, PTFE, MoS<sub>2</sub>) have damping and electrically insulating properties.

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INTERNATIONAL PRELIMINARY EXAMINATION REPORT

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PCT/DE 03/04146

- 2.5 Claim 12: the thickness of the silver layer in D1 will be changed by wear and, in consequence, the electrical resistance thereof will also change.
- 2.6 Claims 14 and 15: the coating of MoS<sub>2</sub> lubricant is smoother after use than when new (see D4).
- 2.7 Claim 17, 21, 24 and 26: see D1.
- 2.8 Claim 18: see D4.
- 2.9 Claims 25 and 27: the lubricant layers disclosed in D4 can be sterilised and can be applied as multiple layers.
3. The combinations of features in claims 4, 7, 10, 22 or 23, respectively, do not appear to be known from the available prior art or to be rendered obvious thereby.